Project Plan

Surge xOS: Visualization of Automated Underwriting

The Capstone Experience

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Functional Specifications

• Make Loan Underwriting Process Fast and Accurate
  ▪ Recommend products directly to customers
  ▪ Allow loan officers to easily view eligible products

• Enable Lenders to Visualize and Adjust Financial Products
  ▪ How the risk and net benefit of a financial product changes as the product policy changes
Design Specifications

• Web application for users to explore which financial products they qualify for.
  ▪ Allow individuals to enter personal and loan information.
  ▪ Recommends eligible loan products.

• Create a web application for underwriters to run a credit risk analysis.
  ▪ Represented visually as a decision tree.
  ▪ Allow underwriters to manipulate criteria to run different credit risk analyses.
Screen Mockup: Data Entry

<table>
<thead>
<tr>
<th>Product Recommendation</th>
<th>Information Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong></td>
<td><strong>Loan Amount:</strong></td>
</tr>
<tr>
<td><strong>Age:</strong></td>
<td><strong>Income:</strong></td>
</tr>
<tr>
<td><strong>Address:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Employment Status:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Goal of Loan:</strong></td>
<td></td>
</tr>
</tbody>
</table>
Screen Mockup: Product Rec

Recommended Product

Product Name: Home Loan
Description: This is a sample product description that will explain why this product is the recommended product for each client

Key Features:
- Low Interest Rate
- Long Term Limit

Alternate 1
Key Features:
- Low Interest Rate

Alternate 2
Key Features:
- None

Alternate 3
Key Features:
- Long Term Limit
Screen Mockup: Risk Analysis
Screen Mockup: Adjust Guidelines
Technical Specifications

- Front end of web applications built with React and D3.
  - Both web applications are embedded in the Surge xOS Salesforce instance.
- Hosted on Amazon Web Services with S3
- Employs Monte Carlo simulations
  - Product Recommendation application uses Surge’s Product Lab data
  - Credit Risk Analysis application uses past historical loan data
System Architecture

- AWS
- Rules Engine
- S3 Storage
- Product Lab
- React
- Salesforce
- Users
System Components

• Hardware Platforms
  ▪ iMacs

• Software Platforms / Technologies
  ▪ Amazon Web Services (AWS)
  ▪ Salesforce Lightning
  ▪ VS Code
  ▪ Atlassian JIRA and Confluence
Risks

• Underwriting Process
  ▪ Determining whether a customer is qualified for a financial product.
  ▪ Perform research into different types of financial products and their criteria.

• Product Generalization
  ▪ The product needs to be tailorable to individual clients.
  ▪ Understand components that an end-user needs in the product, design mockups to show the client and potential end users.

• Lack of Concrete Data and Variables
  ▪ No standardized guidelines for the underwriting process so lenders have their own unique criteria.
  ▪ Find a way to read and display the loan criteria to be analyzed.

• Salesforce and xOS Integration
  ▪ Finished application must be able to be embedded in Salesforce and Surge’s xOS platform.
  ▪ Receive xOS experience and training with the help of the client and create a simple app.
Questions?